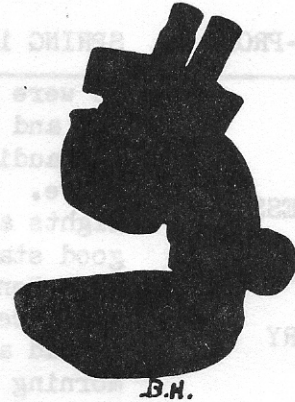




Northwest
Micro Mineral
Study Group



MICRO PROBE

SPRING 1976

VOLUME III, Number 1

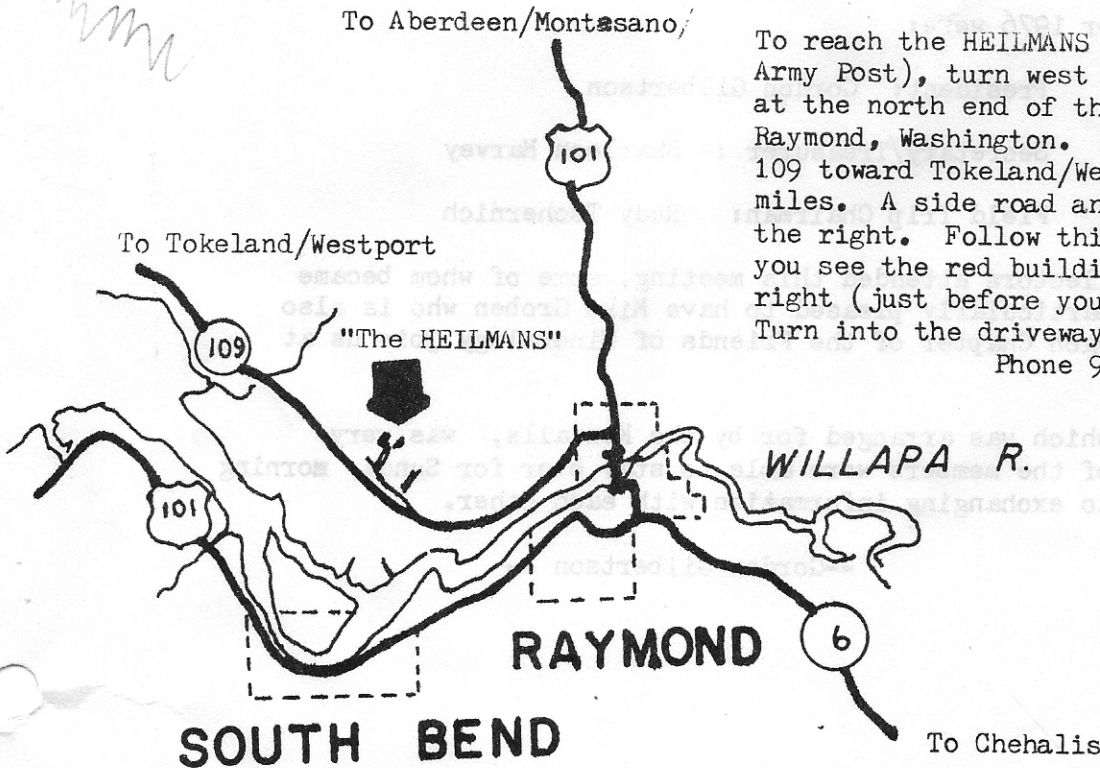
NOTICE OF SPRING MEETING

DATE: 8 May and 9 May 1976

PLACE: "The HEILMANS", Raymond, Washington

TIME: 10:00 A.M.

PROGRAM: General discussion of members experiences at recent Micromount symposiums and shows.
Pot luck dinner
Exchange of mineral specimens.



To reach the HEILMANS (former Bayles Army Post), turn west off highway US 101 at the north end of the bridge in Raymond, Washington. Follow highway 109 toward Tokeland/Westport about 2 miles. A side road angles off to the right. Follow this road until you see the red buildings on your right (just before you come to a hill). Turn into the driveway
Phone 942-5231

BUSINESS
MEETING
SUMMARY

We were all very pleased with the arrangements made by Don and Lee Kendall for the 1975 fall meeting held in the auditorium of the Power and Light Building in Forest Grove. With convenient parking, lots of room, plenty of lights and a good attendance, the meeting got off to a good start with a welcome and introduction by President Russ Kenaga. Since the Fall meeting is the one in which we concentrate most of planning and program activities we had a full and very interesting schedule. In the morning Robert Smith showed slides and talked about his phosphate minerals collecting in the Black Hills of South Dakota. Rudy Tschernich brought us up to date on zeolite collecting localities and on new species of zeolites recently identified. Russ Kenaga showed slides of the phosphate minerals, many of these slides were loaned by Julius Weber who provided photographs of crystals for the Encyclopedia of Minerals. In the evening Bob Boggs showed slides of a trip into Canada which introduced most of us to an entirely new and fascinating collecting area.

During the brief business discussion we set May 8th and 9th for the Spring meeting at the Heilmans, Raymond, Washington. Consensus was that the Spring meeting should continue to provide more time for socializing, trading, and talking about crystals, with a light but interesting program.

Annual dues were set at \$3.00 per family. Non active members (spouses or children) may pay an additional 50 cents to their names on the membership list which is sent to the Northwest Federation.

Officers elected for 1976 were:

President: Gordon Gilbertson

Secretary/Treasurer : Sharleen Harvey

Field Trip Chairman: Rudy Tschernich

A number of new collectors attended this meeting, some of whom became members. We were particularly pleased to have Mike Groben who is also Chairman of the Oregon Chapter of the Friends of Mineralogy join us at this time.

Our evening meal, which was arranged for by the Kendalls, was very satisfying. Many of the members were able to stay over for Sunday morning to give more time to exchanging information with each other.

--Gordon Gilbertson --

FILIFORM PYRITE.....MARCASITE.....MILLERITE ??

Contributed by G. W. Shokal

It wasn't easy for my mind to accept what my eyes were seeing. I was looking at filiform pyrites from Clackamas River (Oregon) for the first time. Those around me were not incredulous, in fact, in retrospect, they were quite unexcited about the whole thing. But, you see, they had been looking at filiform pyrites for several years and had made the exquisite mounts I was looking at in utter disbelief. Upon returning home I determined to learn about filiform pyrites by the simple process of reading about them. What a surprise. I could not find anything on the subject with the amount of detail I wanted. For example, I wanted to know how, by sight identification, I could know what I was looking at...is it PYRITE, or, MARCASITE, or MILLERITE. After all, some of the filiforms that I was told were pyrite, had rectangular cross-sections. Couldn't a malformed marcasite have an almost square cross-section? At least, I figured I would recognize a filiform MILLERITE because it belongs to the hexagonal system and should have a six-sided cross-section. A filiform (?) with a six-sided cross-section perhaps even twisted along the length of the crystal, would certainly meet the description of millerite. Every time? Not so. Here's why.

In my searching to learn what tell-tale clues I could learn so that I could identify a filiform pyrite I came upon an article titled "Mineralogical Contributions by A. Wendall Jackson" (in Bulletin of the California Academy of Sciences, Volume I p 1-4, 1884-6). In this paper a study of filiform pyrites and alibite from the Stanislaus Gold Mine, Calaveras County, California is four pages long. Instead of trying to recap all the material I will keep it short and quote what I feel were the salient points.

..."long, delicate forms, showing bright metallic luster and speiss yellow color. They vary in thickness from 0.05 mm down to the size of the merest delicate hair-like forms and are sometimes 10 to 12 mm in length..."

..."needles are at times quite straight, but more commonly gently curved, spirally twisted, or bent sharply about..."

..."I find that the needle may be interpreted as a combination of the cube with three pentagonal dodecahedrons..."

$a' : b'$	$146^\circ 20'$	$a = (100)$
$b' : d'$	$165^\circ 00'$	$b = \pi(210)$
$c' : c^2$	$129^\circ 29'$	$c = \pi(470)$
$c^2 : a'$	$119^\circ 50'$	$d = \pi(780)$
$d' : a'$	$131^\circ 20'$	
$d' : c'$	$168^\circ 24'$	

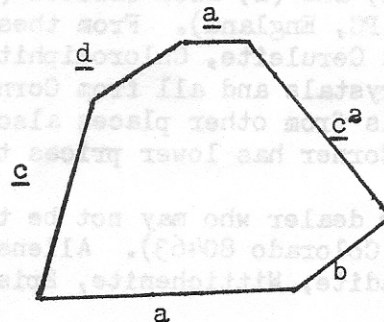


Figure I FILIFORM PYRITE CROSS-SECTION

Continued from Page 3

... "these needles furnish thus a very striking illustration of extreme elongation of a tesseral crystal parallel to one of its chief axes, and of a failure of faces to develop; for of the sixteen faces that should have appeared in the lateral zone of the needle but six are to be found..."

Now I know that a filiform pyrite can have a six-sided cross-section.

I do have a sure-fire filiform pyrite, that is, it undoubtedly is pyrite (or perhaps I should say it certainly looks like it could be pyrite) because on the top of a square cross-sectioned slender filiform there perches a tiny pyrite cube. It's a dandy. Need 30X to really see it, and I am calling it a filiform PYRITE, no matter what anyone might try to prove otherwise. I came from a Clackamas River location basalt that Don Kendall gave me some time ago and he said that he personally collected it.

I certainly would like to learn how I can know what I am looking at... a filiform pyrite, marcasite, or millerite. Can you help me?

Not really being a serious "micro" collector, in the sense of the word most people understand, I was a little apprehensive about contributing to the MICROPROBE when Gordon Gilbertson asked me. But I do like and appreciate good micro sized crystals, particularly of minerals that seem to occur only as micros. Consequently, I watch for places to buy good specimens. Recently several interesting catalogs have appeared with rare and unusual micro-crystal materials on their lists.

Some of the most unusual are on the new list sent by Fraziers Minerals and Lapidary (1724-8 University Ave, Berkely, CA 94703). Many of the rarer specimens are from Jack Parnau's Collection which include minerals such as Arthurite, Clinoclase, Carphosiderite, Goldfieldite, Klaprothite (Lazulite), Wickenburgite, and many others.

Two other dealers of interest are in England. They seem to have many Cornwall minerals, which are hard to get in good specimens. These two dealers are: (1) The Stone Corner (42A High Street, Hastings, Sussex, England) and (2) Dick Barstow (26 Tregeseal, St Just, Penzance, Cornwall TR19 7 PG, England). From these two dealers you can acquire minerals such as Ceruleite, Chloroxiphite, Posnjakite, and Botallackite, all in good crystals and all from Cornwall. They both have a selection of minerals from other places also. Based on my personal observation The Stone Corner has lower prices than Barstow for comparable specimens.

Another dealer who may not be too well known is Allens Minerals (Box T, McCoy, Colorado 80463). Allens is advertising minerals such as Corkite, Ellestadite, Wittichenite, Epistolite, and Hollandite at reasonable prices.

---Mike Groben

HISTORICAL NOMENCLATURE

Contributed by Harold Dunn

I have learned that botanically a peanut is not a nut; nor is a strawberry a berry. We micromounters and micromineralists talk about crystals. Could this term also be one of evolving distinction? Well, along with other data I need to fill spaces in the Register for my collection, is a place for name history and derivation...who is credited with the decision of 'what shall we call it'. In Vol. III of the Dana System by Clifford Frondel old Pliny of Roman times is quoted: "CRYSTALLUS ...is formed ... from cold, for from a liquid it is congealed by extreme cold in the same way as is ice. This is proved by the fact that CRYSTALLUS is found only where the snow of winter is frozen hard; so that we can confidently say it is really ice and nothing else. For this reason the Greeks have given it their name for ice, that is CRYSTALLUS." Now ice crystals we know, but no longer is a crystal always 'ice'.

Today we agree this clear form of silicon dioxide is the mineral QUARTZ. There are reasons to believe the earliest use included all the water-clear gem materials, with crystal form (six-sided) gaining predominance through the years. In a similar sense, chalcedony was applied to all gem materials of a similar outward appearance, ignoring chemistry, that were obtainable thru the markets of Chalcedon in Asia Minor. In the same way turquoise was conceivably several green or blue-green gem stones originating in Persia, India, or other Oriental lands normally reaching Western civilization by way of the Mohammedan traders based around Constantinople.

Specific chemical analysis became possible only after the work of the alchemists evolved into chemistry and mineralogy around the sixteenth and seventeenth centuries in France, Sweden, Germany, and England. My survey of mineral specie terminology shows naming is roughly one third based on descriptive terms from Greek or Latin words, one third to honor people, and one third mostly place names or traditional usage related to a working name of the essential constituents.

Mineral names honoring people started in 1789 when Abraham Werner named a new mineral PREHNITE to honor Col. Prehne governor of the territory (Cape of Good Hope, Africa) in which it was first found.

QUARTZ, as used by Agricola in the 16th Century was 'quartzum' in latin form and seems to be from a Germanic word of unrecorded meaning. It was applied then to the milky-white form not rock crystal. The chemically related OPAL is derived from an old Sanskrit word meaning simply 'precious stone' and was used for this material by Pliny in A.D. 77.

PYRITE, meaning 'fire' in Greek, is traceable to Discordios in A.D. 50. Then it was almost interchangeable with MARCASITE, an Arabic word of unknown meaning. It was Haidinger in 1845 who determined the crystallographic distinction.

CINNABAR, the mercury ore, was used by Theophrastus in 315 B.C. It seems to be from a Sanskrit word for 'dragon blood'. MAGNETITE has two possible origins. As assigned by Haidinger (1845) it was from Magnesia, a part of old Macedonia. Pliny prefers the fable that a shepherd named Magnes was first to call attention to the magnetic properties when the iron ferrule of his shepherds staff attracted particles of the mineral.

If there is enough interest, I will research further, both for my own amusement and your possible edification in future MICRO-PROBE articles.

PACIFIC MICROMOUNT CONFERENCE

Contributed by Gordon Gilbertson

The eleventh annual PACIFIC MICROMOUNT CONFERENCE was held at Torrance, California February 6, 7, 8, and 9, 1976. It was sponsored by the Southern California Micro-Mineralogists, and was, for Minnie and me, a very interesting and stimulating meeting. Several other Oregon people were there, but Russ Haggard was the only other member from the Northwest Micro-Mineral Study Group whom I recognized.

The program was well planned with a good balance between time for the workshops in which everyone set up their 'scopes' and exchanged information /specimens and the formal lectures with slide shows. Since there were well over 150 micromounters there, it took a little while to adjust to the size of the group and the programming. For one thing there is no selling of specimens at this show, although everyone understands that selling goes on briskly in private rooms in the motel. The give-away table is a major feature of the conference. There seems to be real competition in providing good specimens for that table. Even the top experts pay careful attention to it. We saw men like Neil Yedlin and Paul Desautels looking through the material and occasionally selecting specimens. Trading of micro-crystals between individual micromounters is 'the name of the game' at the California Conferences. We soon found ourselves involved in exchanges with persons who were interested in our Zeolites and filiform pyrites.

The formal program included two outstanding slide shows, one by Lou Perloff whose slides of sulfides and sulfosalts gave us an excellent introduction to these minerals which were the 'theme' of the conference. Another was a set of slides from Dr Arthur Montgomery of Clay Canyon, Fairfield, Utah ...Varisites and other phosphates. We had not realized how complex and interesting these minerals were. There were talks by Paul Desautels and Dr Robert Potter on geology and occurrences of sulfides. We found it very interesting to contrast the differing emphasis in these talks. Whereas Dr Potter kept close to the scientific basis which he outlined very clearly; Desautels tended to give more attention to some of the aesthetic aspects of crystals and mineral collecting.

The program also included a fine presentation of "Photomicrography without a Microscope" by Joel Arem. His technique for photographing micro-crystals is that of using extension bellows. He explained the advantages and disadvantages of this technique compared to photographing through the lens of the microscope. There was a quite spirited debate within the audience after his presentation, and the next morning we joined a small group who were invited to a photographic demonstration by a California micromounter who does beautiful work using her microscope.

To us the highlight of the program, however, was a talk by Dr William Wise on new developments in the study of zeolites. A part of his talk covered some of the material he had presented in the Portland symposium on zeolites but he made a number of comments which were new to us (though maybe we needed a second listening to 'get it'). He mentioned that Bob and Mary Hillsdon had found Paulingite in the Monte Lake area of British Columbia; that Cowelsite has been found in Japan; and he gave quite a bit of attention to Altoona, Washington; Cape Lookout, Oregon; and Milwaukie, Oregon in his discussion of recent work on zeolites.

ZEOLITE INFORMATIONUPDATE

Contributed by Rudy Tschernich and George Shokal

Several new zeolite species have been found in the last year or two that were not listed on the zeolite species list handed out at the Friends of Mineralogy meeting at Portland:

MAZZITE $K_2CaMg_2(Al_{10}Si_{26}O_{72}) \cdot 28 H_2O$ found in olivine basalt cavities associated with phillipsite, offretite, chabazite, calcite, and siderite. Type location is Mont Semiol (formerly called Mont Semiouse) in Montbrison, Loire, France. This is also type location for offretite.

Named for Fiorenzo Mazzi, Professor of Mineralogy, University of Pavia, Italy. This zeolite is hexagonal, optically uniaxial negative. Its form is bundles of needles up to 1.5mm long and only 20 microns across. These long thin needles are simple hexagonal prism with a "c" face. It looks just like offretite, and erionite, therefore it will be a problem to tell these three minerals apart.

$$n_O = 1.5062$$

$$n_E = 1.4990$$

$$G_{calc} = 2.108$$

Reference: Contributions Mineral Petrology, 45, (99-105)
American Mineralogist, Mar-Apr 1975, p 340

BARRERITE $Na_2CaK(Al_8Si_{28}O_{72}) \cdot 26 H_2O$ found at Capo Pula, Sardinia, Italy. This is the orthorhombic sodium end-member of the stilbite group. Crystal form is exactly like stilbite. All three members of this group ...stellerite-stilbite-barrerite... have the same crystal form and can only be distinguished by chemical analysis and x-ray pattern.

Note: Epidesmine is only a form with the three pinacoids present and does not indicate a species. Since all three species in this group can have this form as well as the normal form we often see on stilbite, the term "epidesmine" should be discontinued.

COWELSITE is now official; the paper is in print.

POLLUCITE...somewhat questionable as a zeolite...of unusual composition and a very low water content. It does not occur with zeolites in basaltic rock.

WELLSITE...somewhat questionable as a species...but appears to be accepted by most mineralogists. It is a phillipsite containing some barium. Crystal form is that of phillipsite and requires a chemical analysis to be sure.

TETRANATROLITE...a new species from St Hilaire, Quebec, Canada... now accepted by IMA, however no firm information is available here.

...FIELD TRIP REPORT....

The SPRING FIELD TRIP will be to collect zeolites, the Sunday of the meeting at Raymond. Exact location will depend on which location is most productive at the time, however driving time will probably not exceed an hour from Raymond. Bring standard tools and boxes.

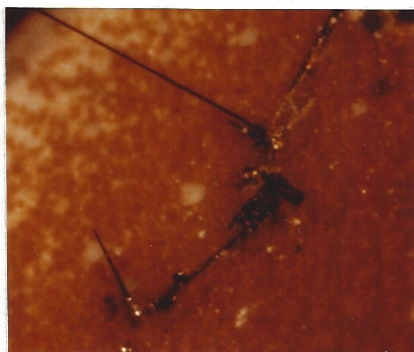
DATE: 9 May 1976

PLACE: (tentative) GOBLE, OREGON

One of the possible locations is GOBLE, OREGON. Most of our membership has collected at Goble, but with the naming of the new zeolite COWLESITE and naming GOBLE as the type location it seems worth while to collect for this new species as well as many of the other rare or interesting species at that location. We propose to meet at the normal location Sunday morning. Collecting will be concentrated on the side of the road nearest the canyon. Most of the rarer species have been found in that small area. Anyone bringing a trailer will be asked to park it down on the main road...along the railroad tracks. Material found at the collecting site will be identified for you if necessary. We will have a few short, on the spot weather permitting, talks from collectors who have worked the area in the past.

PHOTOMICROGRAPH PAGE 1

The following photomicrographs are taken from the transparencies submitted for the Northwest Micromineral Study Group slide show which was presented to the Northwest Federation show in Forest Grove. Since we do not have access to color printing facilities for the MICRO-PROBE, each picture has been separately printed on RC-reversal type paper and mounted individually. This entails a large amount of effort, however if the membership approves... photomicrographs of this type will become a permanent feature of MICRO-PROBE.



filiform PYRITE from Clackamas River, Oregon (G. Williams)



LEVYNE and OFFRETITE from Milwaukie, Oregon (R. Boggs)